

NOV 26 1945

ROCKS and MINERALS

Official Journal
of the
Rocks and Minerals
Association



A Magazine for
Mineralogists,
Geologists and
Collectors

NOVEMBER, 1945

25c

Vol. 20, No. 11

Whole No. 172

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WILFRED C. EYLES

The Enchanted Pueblo

BAYFIELD

COLORADO

ROCKS and MINERALS

PUBLISHED
MONTHLY



Edited and Published by
PETER ZODAC

November
1945

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Entered as second-class matter September 13, 1926, at the Post Office at Peekskill, N. Y.,
under the Act of March 3, 1879
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Specially written articles (as contributions) are desired.

Subscription price \$2.00 a year; Current numbers, 25c a copy. No responsibility is
assumed for subscriptions paid to agents and it is best to remit direct to the Publisher.
Issued on the 1st day of each month.

*Authors alone are responsible for statements made
and opinions expressed in their respective articles.*

ROCKS and MINERALS

PEEKSKILL, N. Y., U. S. A.

The official Journal of the Rocks and Minerals Association

Chips From the Quarry

Armstrong Exhibit Wins First Prize

Mrs. F. A. Armstrong, of Bellefontaine, Ohio, one of the exhibitors at the Hobby Show at the 95th Logan County Fair, held recently in her city, won first prize — a lovely trophy and a \$20.00 check.

Mrs. Armstrong's exhibit consisted of rocks, minerals, sands, corals, and other items, all of which attracted considerable interest and attention. She is a member of the R. & M. A.

Edart Museum Opens in Florida

A museum of special interest to mineralogists, because of the many fine mineral specimens on display, was recently opened at 3511-2nd Ave., S., St. Petersburg, Fla., and is known as the Edart Museum. Capt. Arthur Haas and his sister, Miss Edna Haas, are the owners and curators.

Capt. Haas, who formerly resided at Roxbury Station, Conn., is a member of the R. & M. A. He would be delighted to have visiting members call on him and to inspect the minerals on display.

A REPORT ON SOUTHERN NEW ENGLAND

The old graphite (termed locally as lead) mine at Tantiusques, Conn., was first exploited by John Winthrop, Jr., in 1659; but had previously been worked by the Indians for face paint. The old cuts, or shafts, are still to be seen, but the location is not recommended for specimen hunting, as nothing is likely to be found without mining operations. The interest is mainly historical as it is one of America's oldest mines.

HARRIS LIME QUARRY

Regarding the Harris Lime Quarries discussed on page 463 of the October 1945, issue of *Rocks and Minerals*, one of our readers paid a visit there during September, and reports that the great water-filled hole is virtually impossible for mineral collecting, and advises against any attempts, as the effort would hardly be worth while.

COPPER VALLEY MINE

He also visited the dumps of the old

Grieger Rejoins Firm

John M. Grieger, of Warner & Grieger, who has been in the army for over two years, was discharged on November 1, 1945, and is a civilian again. While in the army he became acquainted with a mineral collector and he, being discharged, has been employed by Mr. Grieger.

While in the service of our country, Mr. Grieger's absence from the firm of Warner & Grieger, seriously crippled the smooth running of this great mineral company, in Pasadena, Calif., so that it was not always possible to fill the many orders received as promptly and efficiently as was the custom before the war. Now with Mr. Grieger back and with a most efficient assistant to help him, the services of Warner & Grieger will be even better than in the past.

The October issue of *Rocks and Minerals* was mailed on October 15th. When did your copy arrive?

copper mine (Copper Valley Mine) near Cheshire, Conn., and while he did not make any very serious effort, all that was to be found was some malachite-stained rock. The workings, like many others, are too old for good results. There is an old barite mine near by which was not visited.

WHIGVILLE COPPER MINE

Several miles north of Bristol, Conn., is the old Whigville copper mine, which was one of the largest producers in the State. The main working is water-filled, and the dumps are well weathered for a depth of several feet. The writer, in breaking open a large piece of quartz did find in it, however, a little galena and a little sphalerite. There is plenty of copper (malachite) stained rock lying around, but none of his has collector's value. Don't waste your time going there.

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PINON MESA TRAILS

By WILL C. MINOR

Pinon Mesa is one of the great flat-top mountains that dot the map of western Colorado. Located in the western part of Mesa County, south of the Colorado River and reaching westward into Utah. It is some 40 miles in length by an average width of about 10 miles. It is one of the numerous high mesas in this part of the state. Its chief industry is stock raising and it is a busy place during the summer months with great flocks of sheep and hundreds of fat cattle roaming the grassy forests. But with the first snowfall the flocks and herds begin to drift down to lower winter range. Soon the entire mountain is deserted, the snow drifts deep and from six to seven months each year King Winter reigns supreme with no human beings to disturb the scene or shatter the silence of lonely places.

Motorists planning a trip to Pinon Mesa need not be confused about what road to take, for there is only one road to the top of the mesa. However, there is a choice of two places at which to start the journey. One may leave the highway at Grand Junction, cross the Colorado River on the Main Street bridge and take the Serpent's Trail road to Glade Park. Or one may leave the highway at Fruita, 15 miles west of Grand Junction, and take the Monument Rimrock Drive to the same place. The distance is 13 miles from Grand Junction and 18 miles from Fruita. From the Glade Park store and post office continue $3\frac{1}{4}$ miles due south to the foot of Pinon Mesa. Here, where the road begins to twist and climb up the steep side of the mesa, is the first

stop for the rockhound.

Various types of chalcedony, jasper and agate are found here scattered about all the way from the foot of the mesa to a point about half way up the side. Some of the chalcedony is white to almost transparent and some mottled with various colors. But the most common is a blue-gray smoky chalcedony, some specimens of which will grade into an almost solid blue or black. A considerable quantity of gem quality agate has been taken from this locality. Some of the finest agates the writer ever found were found here. They include banded agates of various colors and moss agates with red, yellow, green and purple moss as well as those with the common black inclusions. However, like all mineral localities within easy reach of the automobile, this place has been pretty thoroughly picked over and it is no longer easy to find gem stones, or first quality specimens, although a diligent search will usually still yield a few good specimens, and even an occasional agate of finest gem quality. This is especially true just after one of those "gully washer" summer rains which sometimes uncover some excellent material. The Fruita pipeline, that brings the town of Fruita its mountain water from Pinon Mesa, runs through the center of this agate field. No doubt when the trench in which the pipe is laid was dug much fine gem material was uncovered. That happened a good many years ago and before the writer's time. But it is still possible to occasionally find a nice agate or jasper merely by following the pipeline up the hill.

The road winds up the side of Pinon

Mesa with many a twist and turn and, in the short distance of approximately 3 miles, climbs 2,000 feet from the semi-arid Glade Park country to the sub-alpine zone on top of the mesa. The elevation of Pinon Mesa is around 9,000 feet. However, the top of one of these great flat-top mountains is not flat — as you might think. It is rough, rolling country, high ridges, rolling hills, canyons and narrow valleys, with only here and there small stretches that can be called level. It is for the most part heavily forested with grassy meadows and open sage parks scattered about.

As the road climbs up the mesa the pinon and juniper are left behind and are replaced by scrub oak. Still higher are the coniferous trees, ponderosa pine, Douglas fir, Colorado blue spruce, engelmann spruce and alpine fir. But, far more plentiful than these, and the tree that really dominates the landscape, is the quaking aspen. The gleaming white trunks and bright green leaves of the aspens that prevent the rapid run-off of the scene. It is the great groves of aspens that prevents the rapid run-off of snow and rain, that furnish the shade and conserve the moisture for the grass on which fatten thousands of sheep and cattle every summer. In autumn it is these same aspens that turn the high country into an almost unbelievable fairyland of color. Then they splash the landscape with great sheets of flaming gold, a color so bright that the sun seems to be shining on them even on dark cloudy days.

Eight and one-half miles from Glade Park store we reach Windy Point. Here the road forks, the left hand fork turning east and south, crossing East Creek, Johnson Creek and on toward the south rim. The other fork continues roughly south and west to and across the Fruita Reserve, a branch of the Grand Mesa National Forest, and on toward the west end of Pinon Mesa.

Along East Creek and Johnson Creek, especially the latter, the writer has found many nice specimens of smoky chalcedony, and some good black and white banded jasper. There is also a fair amount of

petrified wood in this vicinity. Most of the petrified wood found here is a dark brown or black crystalline type that looks, except for color, much like lump sugar. The outside of the wood is a dull brown or gray that looks just like the rest of the rocks lying about, so that it requires a keen eye to spot the petrified wood even when it is in plain sight. Most of it is rather too coarse grained for cutting, but some pieces are well silicified and will take a nice polish. The writer has found a few pieces of this wood in which the heart wood is completely crystallized. The main part of the log being of the black sugar type and the center filled with tiny white quartz crystals. These are very attractive specimens and quite showy. But, like the others, they are thinly scattered over a large area, and not enough in any place to describe it as a mineral locality. The writer recently read an article in which the top of a certain mountain was given as the locality of a certain mineral. If he patterned his description after that he might say that the top of Pinon Mesa is the locality for a black crystalline type of petrified wood. The only trouble with that statement is that said top of said mesa includes some four or five hundred square miles of rugged real estate. Too much for even the most ardent rockhound to explore on his day off.

A couple of miles farther south, where the rim along the south side of the Reserve drops down to the head of Lobe Creek, is some excellent slickenside sandstone. This unusual rock is supposed to be the result of a fault, or break in the formation, far beneath the surface and the polish acquired by the broken faces of the rock being rubbed together under tremendous pressure and great heat. Only a small amount of the slickenside is exposed at this place, but what there is of it has a very fine polish. The odd part of it is that the rock is just a common gray-white sandstone coarse grained and soft, even for sandstone. Something that ordinarily you would not think of as capable of taking a polish at all.

If we return to Windy Point and take

the other fork of the road we can find another interesting mineral locality. It is two miles from Windy Point to the entrance to the Fruita Reserve. About one-half mile from Windy Point the timber thins out and from there on to the Reserve gate the road passes through a sage park almost free of trees. Several months ago, while driving a herd of sheep across this sage park, the writer discovered some odd specimens in the sage. They were dull red or brown in color, mostly round or egg shaped, rather heavy and thickly coated with what looked like small crystals of reddish chalcedony. They ranged in length from one-half inch to two inches, the largest one found being just over two and one-half inches. The writer had no idea what they were until he sent some of them to Mr. Zodac who identified them as a quartz pseudomorph after barite, of the type known as desert roses. The writer has not yet had time to thoroughly examine the locality, but has found the desert roses, thinly scattered to be sure, over an area nearly a mile in length and one-fourth mile in width. Even that is a pretty fair sized spot in which to hunt for such a small specimen.

However, desert roses are there, and you may be lucky enough to find some.

Incidentally, the desert rose locality, as well as the first mentioned agate locality at the foot of Pinon Mesa, are both on the live-stock driveway administered by the U. S. Grazing Service and are not on private property. Therefore there can be no objections to 'collecting specimens' at these localities.

One other locality is of especial interest. To reach it we follow the road across the Reserve and two or three miles on beyond the west gate of the Reserve to the Frank Landini ranch. Here on a high point sticking out north between two small creeks that form the headwaters of the Little Dolores River is the finest deposit of sand concretions that the writer ever ran across, there are literally thousands of them at this spot. Lest someone should arise to ask why anybody should want to collect anything as common as sandstone, let me hasten to explain that concretions are collected mainly because of their odd shapes. The writer has two sand concretions, the largest one two and one-half inches in length and the smaller one about one inch, that are shaped ex-



SUMMER SCENE
Sheep grazing on Pinon Mesa, Colorado

actly like ducks. He has mounted them in plastic cement in a small wooden frame, so that they look like an old duck and a little one swimming about, and labelled them Sand Ducks. This specimen attracts more attention and comment from visitors than anything else in his collection, and that includes some nice polished agates and showy crystal groups.

Most of the concretions at this locality are perfectly round spheres ranging in size from the BB shot used in a small boy's air rifle up to as big as baseballs. Most of them are golf ball size or slightly smaller. In addition to the round concretions there are many oddly shaped ones such as pears, apples, acorns, peanuts and dumb-bells as well as animals and comic strip characters. The writer has collected from this spot Oswald the Sea-lion, Sammy the Seal, Bruin the Bear, Poyeye the Sailor, Gorilla Joe and Donald Duck.

This locality is, of course, on private property and if you wish to collect specimens permission to do so should be obtained. In fact, with the exception of the stock driveway and the National Forest mentioned, all the land on Pinon Mesa is private property, and it is only common courtesy to ask permission before trespassing upon it. With very few exceptions, permission to collect specimens is willingly granted when asked for. But at the same time most ranch owners resent having strangers roaming about their property without asking. It is strange how many visitors to the range country, hunters, fishermen, campers and plain picnickers, think that because they are out in the mountains and there are no houses in sight that they are on public domain and can go and do as they please. It is this disregard of property rights that often causes hard feelings between ranchmen and visitors. So if you wish to hunt rocks, or anything else, on a mountain ranch it is best to first hunt the owner and ask permission.

The writer makes no claims of having listed all the minerals found on Pinon Mesa, or to have described all the interesting localities in this article. He has spent eight summers on the mesa and has

by no means seen it all. But then who has?

Amber Occurrence in Romania

Amber is found at a number of localities in Romania but the chief occurrence is along the banks of the Buzen River. It is collected by peasants who live in the area and the best time is after rainstorms which tear away portions of the river bank exposing a black carbonaceous material in which are embedded lumps of amber.

The amber varies in color from yellow, red, gray, blue to deep black. It differs from the ordinary Prussian amber due mainly to its beautiful and varied coloring and for its cracks and cavities which give the gem the appearance of glistening scales. This amber is called rumanite, named for the former spelling of the country, Rumania.

Buzen River is in southeastern Romania. It rises in the Eastern Carpathian Mountains and flows generally eastward to empty into the Sereth River, about 15 miles west of the city of Galati (Galatz).

Fine Calamine in Pennsylvania

Calamine has been found at a number of zinc mines in Pennsylvania but one locality which has produced fine specimens is the old Ueberroth mine at Friedensville. Here the mineral occurs in small whitish to pale yellowish crystals in druses and crystallized groups.

Friedensville is a small hamlet in S. E. Lehigh County of eastern Pennsylvania.

Good Molybdenite in Pennsylvania

One of the attractive minerals for which Pennsylvania is noted is molybdenite and very fine specimens occur at the Williams serpentine quarry, Easton, Penn.

Molybdenite in small lustrous flakes and equally lustrous plates and masses occurs in the quarry and when embedded in greenish serpentine it makes very showy specimens which are eagerly sought by collectors.

Easton is a small city in the eastern part of Northampton County (in the eastern part of the state).

NAGS HEAD AND FULGURITE

By JEFF HILL

58 W. 106 Street, New York 25, N. Y.

Nags Head is a tiny settlement on that sandy peninsula extending along the coast line of North Carolina, in Dare County. No one can be certain why Nags Head is so called, but it is generally thought that pirates gave it this name. Steeped in legend and superstition concerning pirates, shipwrecks, and spirits, rich in Indian lore, it would take a historian nearly a lifetime to do justice to its many aspects. And from a geologist's point of view it is of equally provocative interest.

The terrain consists entirely of clean, light-yellow sand, strewn with a scant growth of desert grass. The Nags Head sand hills, like the well-known Kill Devil Hill, which is one of them, have moved in the direction of the prevailing winds through the years. These mountains of sand creep up on forests, engulfing and smothering them, reaching eventually many times the heights of the highest trees in their path. As the sand hills move on centuries later, there is nothing left of the forests; they have completely disintegrated. However, the hills leave other more durable residue in their wake, and is only in the wake — close to the hill itself — that objects can be found because of the extreme weathering forces which attack them after they lose the protection of the marching dunes.

Once there were many Indian villages in these parts; this is evidenced by piles of oyster shells, much crude pottery, and an occasional arrowhead. We can deduce that the material from which these arrow points were fashioned must have been brought to this area by friendly tribes as trading material. It must also be remembered that there were once forests here; the Indians did not live in such a desolate place as Nags Head is today, as will be seen.

Also to be found here are many rocks that are not native to any locality for hundreds of miles around nor could they have been of any use to the Indians: sandstones, pudding stones, and crumbling black igneous mixtures. To explain this

we must remember that Nags Head is only three miles from Roanoke Island, scene of the famous Lost Colony episode and birthplace of Virginia Dare (1587). John White, Virginia's grandfather, drew maps of this area which seem to indicate that a small inlet once cut through the sandbar at the place where Nags Head is now situated, and he reported that much ballast was thrown off his ships to permit them to pass through this shallow waterway. The rocks mentioned above I believe to be undoubtedly a part of this ballast. I have found them to be practically identical with those rocks on Roanoke Island known to be ballast from these ships. Since I have not found this supposition in any of the records of this period, I offer it to any historian who might be interested.

But this raises the question of which came first — the Indians or the inlet. There are three other circumstances which add to the confusion. First, sea shells of the recent venus and arca types and beach pebbles are scattered about this area. Second, the ground is strewn with human bones, evidences of ancient cemeteries of early settlers or of the Indians themselves. There are no signs of beads or of the customary ornaments that we have learned to expect of Indian burial places, however. The third is the presence of white fossiliferous sandstone of Cretaceous age in masses a foot square. This might have been among the ballast rock but I have not found its counterpart on Roanoke Island. Arrowheads, ballast, shells, skeletons, and fossils—all to be found within a thirty-foot radius! The whole set-up resembles a geologist's practical joke.

Some years ago while wandering about this interesting locality and pondering its many mysteries I discovered the specimen which first aroused my interest in collecting rocks and minerals. The specimen was lechatelierite, or fulgurite, as it is more commonly called.

Detailed information regarding fulgurite is both scarce and hard to find. All

the information I was able to find will be contained in this paragraph. As you may know, it is sand (quartz silica) fused into a hollow shaft by the action of lightning. It seems to occur by two methods: A bolt of lightning may strike a tree and ground itself through one or more of its roots, thus forming a thin glassy crust about the tapering root; or lightning may strike sand or be drawn into the sand by an object which attracts it, fusing a hollow, tapering shaft without any shavings agent. (Certain sources I have found also mention fulgurite occurring as a constituent of other rocks. I do not believe that this is of a variety brought about by lightning.)

To this I am now able to add something more. The shafts are hollow since this is in the nature of electricity itself. High voltage wires and lightning rods are often cast hollow since the current travels only on the surface. In both the above mentioned formations of fulgurite the shafts are identical except for the presence of root matter in the former case; the sand grains are completely fused on the inner surface and are therefore more transparent and glassy, while the outer surface is grainy and resembles dull sandstone.

The fulgurite that I found was of the first type described above and contained root matter. I picked up a few inches of it that I found lying on the ground and took it to the University of North Carolina for identification, since at that time I knew nothing about fulgurite. There I learned its identity and how very rare it is. I was told that this specimen was the first fulgurite reported found in North Carolina. Later I learned it was even more rare than I had at first supposed. Few collections boast a specimen, it is expensive when offered for sale, and few museums — not even the Museum of Natural History in New York City — have representative collections of it. I was quite pleased with my find and traded bits of it for other minerals with collectors and with several museums.

The next summer my father and I returned and found the shaft without much trouble, since we now knew what to ex-

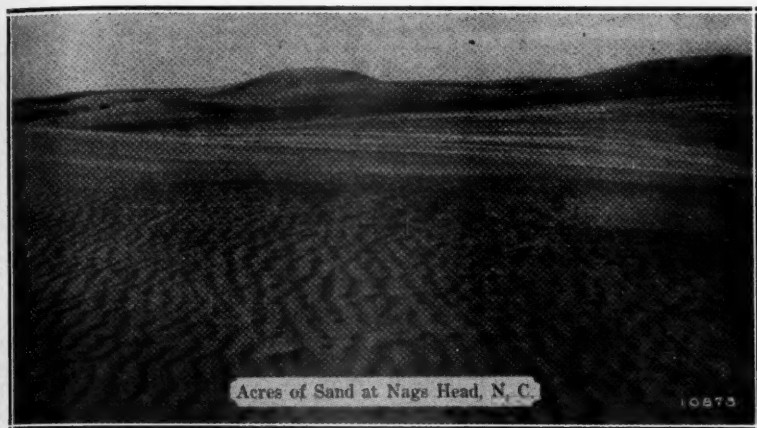
pect. There in the broiling sun we dug four feet of shaft from the hot white sand. In filling the hole we had dug, we placed in it a five-foot iron rod to mark the spot for further digging, as our vacation was short. Then two years ago, my wife, father, and I went to the spot but found our marker gone. Each of us was equipped with spade and bucket and we proceeded to spade up the whole side of the hill. We found neither the marker nor the fulgurite.

This summer (1945) we returned and found that the hill had moved considerably, exposing new ballast rock, pottery, and many more skeletal remains. The ground was strewn for acres with human bones, wet from a recent rain and stained a brilliant green probably from copper or mold. The shifting of the sand had also brought the shaft of fulgurite to the surface once again. Taking turns digging, we unearthed a few more feet.

On trips made to neighboring localities we found several shafts of a different sort of fulgurite which did not contain root matter. Moreover, the tops of the shafts were not cylindrical at all, but foliated masses often more than an inch across. Among other prized pieces were four tubes from which small shafts an eighth of an inch diameter branched off for a few inches from the main shaft.

Unfortunately, most of these pieces were dug from sand saturated with water, which caused an incessant caving-in, breaking and burying the shafts. This rare item is not dug like a root, but must be handled with great care as it is extremely fragile. It is virtually impossible to remove a piece of any great length in wet sand because of the caving-in, or indeed, under the most favorable conditions, because of the fragility of the fulgurite itself.

One week of digging during this summer netted us around fifty feet of fulgurite from tiny fragments to pieces measuring eleven inches in length. Diameters ranged from three-quarters of an inch to as small as an eighth of an inch. While the tubes taper, I have never encountered a termination, or any fulgurite of a diameter of less than an eighth



Acres of Sand at Nags Head, N. C.

19573

of an inch, since at this point they are so thin and frail they seem actually to merge with the sand. Some were pure white, often quite transparent in the case of the smaller diameters, grading to an opaque gray.

The question arises: how is it that this fulgurite is of a gray color while the sand from which it is dug is light yellow? The reason, I think, is either that at the time of its formation the sand, or sandy soil as it might have been since it is supported vegetation, was of this gray color, or that the shaft is gray from carbonized root matter which fused into the silica. While the latter explanation sounds simpler it does not seem so probable, since the fulgurite which did not form around roots was also of this gray color. It is impossible to determine the age of the fulgurite by examining it, but the location in which it was found would seem to indicate that it was formed a century or more ago. The trees themselves no longer exist. Their former existence is only evidenced by the root matter found encased by the fulgurite shaft, which in the specimens I have collected, has disintegrated into frail bits of black fiber with the appearance of charring.

Nature guards this treasure well. The price we had to pay was agony from mosquitoes, red bugs, and all too frequent contact with quicksand. Have I forgotten to mention sunburn? Further-

more, everytime we went prepared with spades and buckets we never found any fulgurite, but when we went wholly unprepared and had only our hands to dig with, we found quantities and had to extemporize a conveyance to bring back the specimens. No one who wishes to live to a ripe old age should go into the fulgurite business, at least not at Nags Head.

Cango Caves, South Africa

One of the scenic wonders of South Africa are the Cango Caves, 18 miles north of the city of Oudtshoorn, in the southern part of Cape Province. The caves are in limestone and situated at the base of the Zwartberg Range and were discovered in 1780. They have been explored for at least two miles and because of the many beautiful stalactites and stalagmites have been electrically lighted and opened to the public. The passages and rooms contain so many excellent stalactites the caves are considered as being one of the finest stalactite caverns in the world. It is in the furthest reaches of the caves that the finest stalactites and stalagmites are now to be found as near the entrance much damage has been done by visitors. That the caves were known to the natives of the region, before the white man visited the area, is attested by some Bushman paintings near the entrance; these paintings are being preserved.

A MINERAL ITINERARY OF A RETREAD

By MAJOR W. B. S. THOMAS

These lines are prompted by reading recently "My Eastern Vacation" by B. M. Brehm (*Rocks and Minerals*, January 1945), who seems to have met many of my own old friends.

I used to live in Maine, at Dover-Foxcroft. Sundays, my wife and I took flying trips to Newry, Black Mountain, Mt. Apatite, and other localities in Maine. By the time the Japs bombed Pearl Harbor, our mineral collection was well started.

I fought in the Air Corps in the last war and was enlisted. The planes of those days were flimsy things of wood, piano wire and varnished cloth. Bombs weighing 6 pounds were in a rack alongside the pilot. There were no bomb sights — a pilot looked over the side and estimated where he should throw. Ack-ack was not invented.

Major Spaatz was my commanding officer. The night I arrived in Issoudun, France, Spaatz flew a Spad, armed with a shot gun across his lap and he was going out to meet six German planes who were bent on a raid of our area. Machine guns were hastily mounted on fence posts as anti-aircraft and they darned near shot Spaatz down. In time he dropped a flare and a note "Cut it out. Spaatz."

So the old retread volunteered for the second war. Today planes can drop a blockbuster on a barrelhead from 30,000 feet. Wounded are flown home within a few days from the front. Now I am a flight surgeon and fly in modern planes, knowing the latest wrinkles in medicine. Again I have the same commanding officer, but now he is General Spaatz.

And now starts a mineral itinerary of a retread.

Greenland Visited

First to Camp Edwards where I was pronounced an Arctic Expert and in a month Ivigtut, Greenland, was visited. The manager of the great cryolite pit by the sea was a passenger on our boat and by the time I had reached Ivigtut, a trip to the mine was assured and personally conducted by him. A few Franklin, N. J.,

minerals and a spare Purple X enthralled him; a professor from the University of Toronto was along to explain the geology and terrain.

At BW 8, north of Ivigtut, purple garnets, basalt, hematite, epidote, and some quartzes were collected. The purple garnets were secured from blasting near the air base on Sundraströmfiord (or S. Stream fiord), at least 50 miles inland. An ATC pilot, returning empty, agreed to throw off about 100 lbs. of the minerals at Presque Isle, Me., from which point they were sent to my home.

Hudson Bay Visited

One of the trips made while in the north was to around Churchill, Hudson Bay, Canada, and there we saw evidences of coral formation. On the east side of the outlet of Hudson Bay, away north, there is also a coral reef. That area has no particular mineral interest but the fossil boys would have had a good time. One of the trips by train south from Churchill, however, netted me some nice gold specimens which came from that area to the west and south of Hudson Bay.

Arkansas and Texas Visited

Finally back to the States. My wife was in Hot Springs, Ark., in the Public Health Service. I was still a Captain; she was a Major. Since she ranked me and since Magnet Cove was not far away and since she had a car, I visited her and Magnet Cove. Of course I had plenty of minerals to ship home.

Next to Randolph Field, Texas, with visits to the famous calcite quarries not far away.

Connecticut Visited

Next to Bradley Field, Conn., where I ran into Major Max G. Johl who was the man who would give me medical supplies for my African trip. He found out I was interested in minerals so together we ranged the Strickland and other quarries around Portland. There we found manganapatite that fluoresced an orange color. It was not well described anywhere

In great expectation of having made a new discovery, we piled into the car and rushed off to Schortmann's Minerals, at Easthampton, Mass. "Oh, yes," said one of the Schortmanns, and he handed us a nicely printed label for our collection. Here we saw a 6 x 5 slab of material with the rare crystals of willemite (clear yellow and gemmy) from Franklin, N. J. The label read \$3.00. If it had read \$30.00, I would have bought it at once! But Max dropped the specimen which on landing flat broke exactly in half so we each had a gorgeous set of perfect crystals, numbering about thirty, for \$1.50!

Gold Coast Visited

Off to Africa and the first station was Gold Coast (Accra), where I bought many perfect octahedrons of diamonds from the black market. This was of course illegal but actually encouraged by the Provost Marshall who at the moment was interested in the volume of diamonds getting through the black market to the Germans. Gold nuggets I recognized as manufactured variety. The gold occurs in the country as grains in black sand. The natives, who mined the gold, were sold mercury which was apparently pure but heavily adulterated with zinc to stretch the precious metal. The mercury was often stolen from the bearings of the light-house, which was a British source, and from the American army. The Gold Coast gold ounce is half the weight of the standard. If one bought an ounce of that gold in bars, as offered to Americans, at the price of \$28 an ounce (our price in the U. S. A.), one brought home not 20K gold bars but 8K or 9K and paid therefore four times the value.

The diamond crystals were selected from perhaps four pounds of material. A light made by Edwin Skidmore, of Westfield, N. J., which I had with me, helped me to pick out the fluorescent and phosphorescent ones. Daylight and a 12 x B & L lens helped me select perfect crystals without carbon. A few twins and a few definitely green crystals were included.

Morocco Visited

Then to Marrakech, the southern capi-

tal of Morocco, where by the road on the way to Casablanca (a seaport in western Morocco) we parked our jeep. There fossil shells and cherts were picked up and further north, graphite crystals and amorphous graphite dirtied our fingers.

Algeria Visited

Back later by plane to Oran, northwestern Algeria, which overlooked the Mediterranean Sea. There I met Sgt. Powell who guided me to a spring which we thought would be adequate as a water supply for our camp. The water table was only four or five feet down, brackish and unsuited if used direct. The water appeared to be crystal clear but in analysis was heavy with barium! Luckily our army tests everything. The books tell us that ages pass as the formations of such deposits are changed. We saw it happening before our eyes — calcite and barite plus water from underground caves were producing hot water laden with carbon dioxide, some sulphur, and barium in amounts enough to kill us all! The hill was smeared over with fern-like etched crystalline masses of barium salts — smeared like a huge cake frosted with patches.

Nearby was a landslide, evidence of an earthquake that we had recently felt. One could stand on the cliff and look down on cabins a few hundred yards inland where the sea had risen up from the bottom to leave the sea still muddy.

Nearby also were calcite quarries in which nice fine-toothed crystal aggregates of calcite could be found.

Tours were made to various spots of our area by the soldiers interested in nature (snakes, butterflies, and minerals). We searched for smaltite that was reported to occur in the neighborhood of Cape Falcon. (Very nice smaltite from this area was found in a cigar box in the home of O. Ivan Lee, of Jersey City, N. J.) We found no smaltite but we did find opalite, hyalite, hematite, cerussite, siderite, calcites that fluoresced green, and twinned gypsum crystals that fluoresced a peach color.

Florida Visited

Well seven months of that and then

to Tampa, Fla, where I waded the shore of Tampa Bay at Ballast Point and found some good geodes of chalcedony pseudo. after coral. These were added to the hundreds of pounds of minerals in the hallway at our home.

British Guiana Visited

Then to Georgetown, British Guiana, where I saw Kaieteur Falls from the air. (The falls are south of the city and are one of the highest in the world). I speculated on the mineral wealth of the country and heard of gold washings at the Falls. But the railroads do not go inland as it would bring about an economic change — the sugarcane workers would leave for greater wealth in building that railroad and later mines would take them. Malaria and filariasis would also play a role.

Brazil Visited

Then on to Manaoas, Brazil, and by stages to Rio de Janeiro. There I met Francelluco Horta and his brother, both of whom speak and write English. Horta gave me many specimens which made my eyes budge. Good green hiddenite crystals, half an inch long, in matrix; some cutting pieces of kunzite, etc. I bought two hiddenite gems from him at the same price as for the kunzite, of which I secured two deep colored specimens. One of these hiddenites is now in the possession of Max G. Juhl. The phenacite he gave me O. Ivan Lee examined and pronounced caesium beryl. Later we will get two or three good sized gems from these. Chrysoberyl, beryl, cyanite, aquamarine, rose quartz, morganite, and a fractured emerald unsuitable for cutting added to the booty. Then I bought a cut sample of andalucite which is very much admired. Horta was a find in many ways. He was practically born in a diamond mine. He runs a lapidary shop and never lets a customer fool himself. He helped me choose only good clean specimens when he could well have been within his rights to sell me something inferior. It was a pleasure to have confidence in him.

Later I looked up J. M. A. Robinson,

Box 75, in Rio, and he promised me a trip to a reliable man. Imagine my amusement when he took me to Horta. Robinson treated me royally and gave me phantoms of Brazilian quartz, some large rutiles, and a fine twin. He is in the rock crystal business.

At Bahia, Brazil, I picked up a rock crystal with vesuvianite inclusions.

Dr. Edward Pietro Scorza, Minerals section of the Department of Agriculture, Rio de Janeiro, entertained me for an hour with a crystal that was large, appeared to be identical with calcite, was doubly refractive, and would not dissolve in concentrated hydrochloric acid. I gave him a promise of some Franklin, N. J., calcite that fluoresced red and he gave me the crystal (it was magnesite).

Chile Visited

Back to Panama and down the west coast of South America. I met a naval officer who took me to the warehouse of the Grace Steamship Line at Antofagasta, Chile, where the piles of unsayed minerals by the tons were offered me for sampling. Much of this was Bolivian in origin.

On to Santiago, Chile, where the wife of the attache for air, gave me in exchange for British Guiana orchids (plants), chenevixite, antlerite, brochantite, and several others. On the way back I stopped in the offices of the various mineral attaches and picked up some fine argentite, cuprite, ruby silver, hair tin, and a few silvers with rare halides. The hair tin has fine "hair" on both sides as well as several good crystals of cassiterite. This was Bolivian.

In the same city I had several occasions to see Col. Dan Ellis, the military attache. He was somewhat amused at my interest in minerals and when I was at his house, his wife showed me some old rocks she had found in a mine and was using for a rock garden. Among them were several beautiful antlerites which were far better than any in my collection. She gave them to me and they are now in my home in Maine.

Peru Visited

In Lima, Peru, I saw Dr. Karlos Schroth in their Department of Minerals. He spoke English which made it very easy for me and I got some nice silver specimens there but the best specimens came after a long time from a man who had been injured, an officer in the Peruvian army. We picked him up at Telara, Peru, and flew him in the B-17 down to Lima. He offered to shop or do anything out of gratitude and he was forgotten. Not until last August did I hear from him. He had given one of our crew a package with some lovely rutile crystals (in cavities) and some silver ores which I have not yet had the time to study. I have sent them on to O. Ivan Lee who will study them and go halves with me, unless some of the rare silver haloids are included in which case Ivan will be supposed to keep them all.

Back in U. S. A. Again

Finally back to Tampa, Fla., again to catch a train for Chicago where I had to borrow a suit of winter clothes from Max A. Johl, Major A. C. and an overcoat. Literally, he gave me the clothes from his back!

On to Denver, Colo., where I traded at Pohndorf's and later to see the private collection of E. Mitchell Gunnell who has some really fine gold specimens as well as the finest collection of crystals I have seen outside of a large museum.

Finally East again. Dropped in on my friend, Geo. Weeks, of Blairstown, N. J., to see his Franklin collection. There I pocketed unintentionally a handsome, rose-orange fluorescent specimen I could not name. In a few days I returned it with apologies and an Accra, Gold Coast, diamond crystal, and a Franklin, N. J., ruby which is rare enough to show my good interest.

Meanwhile I had gone to Middletown, N. Y., to see a mineral collection which had accumulated through the years in Franklin, N. J. Miners of discriminating taste had brought in many now uncommon large and perfectly terminated rho-

donites, as well as many others. Right in Middletown, two bus stops from the Monroe Mineral Store, in Monroe, this collection is in the home of the bartender's granddaughter, Miss Lois Pollard. But I saw nothing I did not already have and not being a dealer, I bought nothing. She was most kind, however, and looked up the address in a local paper of an old woman of 81 whose husband had a collection. I went to Monroe to see Mrs. E. Fitzgerald and she was a swell person, a typical Yankee. She stated her price and I looked only once and accepted at once. I bought a mineral collection to fill in the gaps! Among the specimens were gorgeous topaz crystals from Thomas Mt., Utah; an emerald crystal as big as my finger in matrix; Franklin, N. J. rubies; pigeon-blood ruby in matrix from Ceylon; gorgeous opals from Australia, and on and on and on and on.

Kansas Visited

This spring (1945) I was stationed in Kansas and around Salina I found a bunch of the minerals described in the June, 1945, issue of *Rocks and Minerals* called barite roses but these unlike the ones described and which I have seen many times in collections, were not red but sand-colored or tan and not quite the same in shape. Also some pyrite in good cubes as well as some arsenopyrite. These occur in sandstone in a quarry about 6 miles from the Salina Air Base near Camp Philips. I understand that the government used that quarry for road material. Then on the bridge road near Brookville, Kans., beside the road, were some good crystals of gypsum. Of courses we visited the various salt mines south of there and got some good cubes of halite with water and bubble inclusions. These cubes fluoresce red.

Now I am off again—jumping like a flea. Not bad for an old retread, hey? And I am really working when I don't collect minerals!

Editor Note:

When last heard from, Major Thomas was in the Pacific, on Okinawa.

FIRE DESTROYS TONS OF SPECIMENS IN ALBANY, N. Y.

By JAY L. SMITH

A spectacular fire began about 9:30 p. m., Monday, August 6, 1945, in an old building opposite the N. Y. State Education Building, Albany, N. Y. The fire lasted several hours (the building was of wood with brick veneer facing on the front — a regular fire trap — and was completely destroyed). The heat broke windows in the State Building, across the street, and large pieces of charred wood from the blaze littered the pavement. The building, a large one, owned by and formerly St. Luke's School (Episcopalian), had been rented for many years by the New York State Museum for storing specimens. It has been estimated that from 75 to 100 tons of fossil and mineral specimens, mostly from New York State, were destroyed by the fire. The newspapers did not mention the loss of museum material, as the lower wing of the building was used as a children's hospital; pictures in the papers featured the removal of the patients with no loss or casualties.

The New York State Museum occupies the top floor of the State Education Building — the museum is famous for

its mineral exhibits. The writer visited the museum on the afternoon before the fire. It was fortunate that the fire did not occur during the day as the building was surrounded with parked cars. It was also most fortunate that a heavy rain fell during the fire to lessen the danger from flying embers.

The writer had a three day educational book exhibit at the N. Y. State Teachers College in Albany and from observations made here and at similar exhibits in other institutions, he found that geology and mineralogy have not been getting a fair share of study throughout New York, New Jersey, and Pennsylvania and he proposes to feature more books on these subjects in future exhibits. He also discovered that the layout and details of public buildings, from point of view of deliveries, have been neglected. Most school buildings lack proper service entrances for the delivery of display material and supplies, and handy storage and display space. This matter has been referred to the State Architect in the hope that future buildings may show some improvements.

GEIGER QUARRY OF PENNSYLVANIA

By PETER ZODAC

In southern Lancaster County, of southeastern Pennsylvania, is located the Geiger serpentine quarry. The workings consist of four or more pits located about 300 feet west of Octoraro Creek (100 feet wide).

To reach the locality, take dirt road which runs east off U. S. 222, right at the Maryland-Pennsylvania state line — go about 1½ mile, turn right and go down hill through an apple orchard and stop before the creek is reached; two pits are to the left of the road and two to the right. About 1500 feet to the right of the road and only 60 feet from the creek is a small tunnel (15 feet long) that is said to be an old chromite mine.

Among the minerals occurring at the pits are the following:

Breunnerite: thin brown veins in micro-lite.

Brucite: thin white veins in serpentine.

Chromite: tiny jet black octahedrons in talc and as thin veins in serpentine.

Serpentine: dark green massive variety (the main mineral quarried).

Picrolite: very fine fibrous masses of green color occurs here. The fibers of this variety of serpentine are, often so loosely compact as to break down into very fine needle-like splinters which play havoc with one's fingers, one might not suspect that the pretty specimens would prove so treacherous — penetrating the fingers and causing a very disagreeable sensation.

Talc: Very fine crystallized specimens of a lovely apple-green color occur here. It is this mineral which has made the quarry popular with many collectors.

PRIDAY'S RANCH, OREGON

By LLOYD COLBURN

Longview, Washington

One of the many localities of Oregon that is noted for fine minerals is Priday's ranch, in northern Jefferson County, in the northern part of the state. The ranch (collecting area) is 13 miles from the main highway and is famous for its agates and thunder eggs but petrified wood, opal, etc. are also found.

A few miles south of Willowdale, a filling station on U. S. 97, in northern Jefferson County, and near mile post 79, is a large white house on the east side of the highway. This is the ranch home of Mr. and Mrs. Priday from whom permission to collect must be obtained — they will also give a collector directions how to reach the best collecting areas.

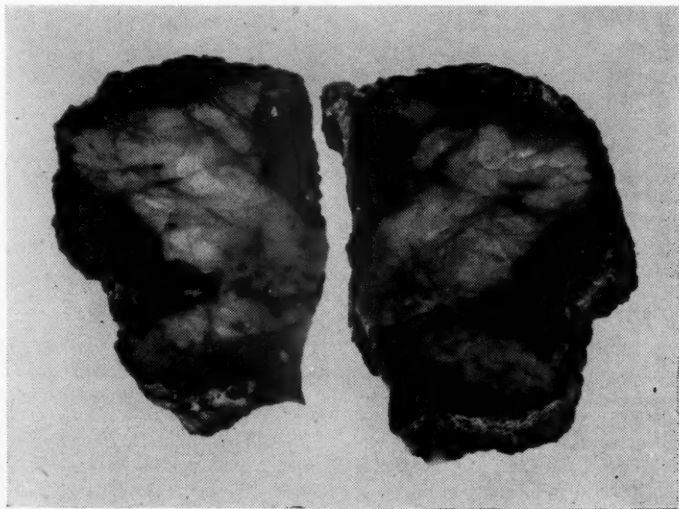
I recently spent 18 days collecting on the ranch which consists of some 60,000 acres with many collecting beds. Pony Butte, a high, flat lava-capped elevation, is a prominent locality in the center of the agate beds on the ranch; on the east side there is an enormous deposit of polka-dot agate which made the locality famous and on the south side of the butte very fine plume agate may be found.

Thousands of collectors have visited Priday's ranch which is now dotted with many small diggings.

One day, on my recent visit to the ranch, I decided to dig a new hole and hit right into a pocket of red moss agate and red thunder eggs which produced some of the prettiest flower agate imaginable. These specimens consisted of red, brown, orange, and rose "flowers" about $5\frac{1}{2}$ inches across.

The photo accompanying this little article is of one of my prized specimens — a thunder egg from Priday's ranch which has been cut in two and polished. The outlines of a woman's head is plainly visible in both sections. This specimen was collected a few years ago.

I have heard that 51,000 acres of Priday's ranch have been sold and that the new party took possession on September 1, 1945. What disposition will be made of the agate beds I do not know. We used to pay \$5.00 per week for the privilege to dig for specimens and the area was fast being dug up. I hope the locality will remain open to collectors.



A Thunder egg "Madonna" from Priday's Ranch

GEOLOGY OF THE BEDFORD, N. Y. PEGMATITE DISTRICT.

By THOMAS W. FLUHR

All mineralogists have heard of the famous Kinkel Quarry, in a pegmatite near Bedford Village, New York, from whence have come a great variety of unusual minerals. But little information has been available however, in regard to the origin of this pegmatite and its relation to the geology of the district in which it occurs.

The Kinkel and associated quarries lie within a belt of the Manhattan schist formation, which together with the Inwood limestone and the Fordham gneiss, forms the country rock. Three igneous intrusive members are present also; the Yonkers granite, the Harrison diorite, and the Thomaston granite. The last has given rise to the pegmatites.

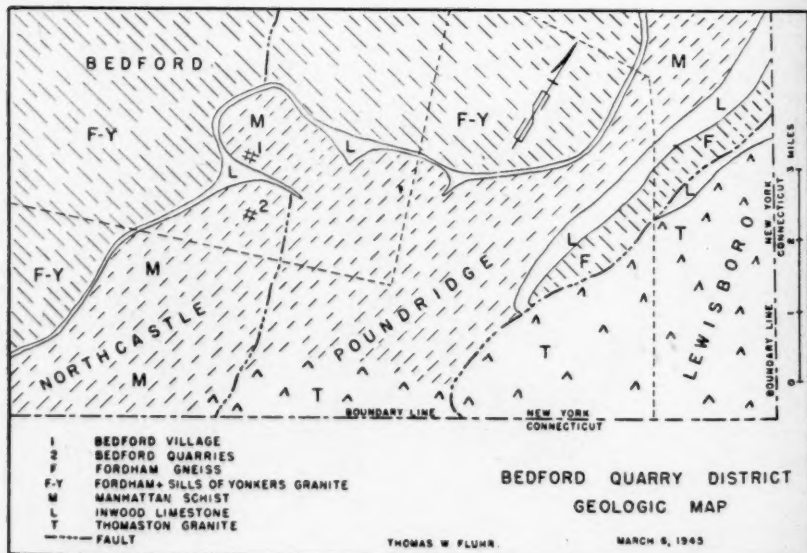
The Manhattan, Inwood, and Fordham formations are well-known and have often been described. The first two are considered by some geologists to be Cambro-Ordovician in age, while others believe them to be pre-Cambrian.

The Fordham is usually regarded as pre-Cambrian because of its lithological

and structural similarity to the gneisses of the Highlands of the Hudson. The latter, since they are overlain unconformably by the Poughquag, quartzite, are unquestionably pre-Cambrian. It should be noted however, that the Fordham differs in many respects from the gneisses of the Highlands. Therefore, its correlation with them cannot be regarded as other than an unproved hypothesis. Although possibly pre-Cambrian in age, there is nevertheless room for further research in regard to its age relations and correlation with other formations.

The Harrison diorite is a black hornblendic intrusive, which invades the Manhattan schist in the southern part of the Stamford, Conn., quadrangle. It does not invade the Bedford quarry district as a unit, but hornblendic rocks, apparently part of the Harrison, outcrop in the area, and are well-developed along the Hickory Kingdom Road, about two miles to the south of the Kinkel quarries.

The Thomaston granite occupies a large area in the towns of Poundridge and



Lewisboro, east of the quarries, where it invades the Manhattan schist formation.

The rock at the Bedford quarries has been called an augen-gneiss, because of the large twinned microcline crystals which occur in it. In the region east of the quarries are other pegmatite intrusions, which also carry the "augen." These pegmatites become numerous proceeding eastward, until the area occupied by the Thomaston granite is reached, and undoubtedly have been derived from that granite. About $1\frac{1}{2}$ miles west of the quarries similar microcline "augen" appear in the Fordham gneiss formation, so that the pegmatites have affected both the Manhattan and Fordham formations.

Barbour (1) has shown that the pegmatites were intruded shortly after a period of dynamic stress. The age of the cyrtolite from the Kinkel quarry as determined by Muench (2) is probably late Ordovician. Hence the regional deformation which affected the schist in this dis-

trict occurred at the time of the Taconic orogeny. The author (3) has discussed the characteristics of regional deformation in the region between the Highlands of the Hudson and New York City, and shown that thrusting from the northwest appears to have developed the major structural feature at that time.

The relations between the Thomaston granite and the Harrison diorite are not clear, but it appears probable that they are almost contemporaneous in age; the Thomaston being the younger.

- (1) George Barbour. "Origin of the Bedford Pegmatites." *Am. Jour. Science*, Ser. 5, Vol. 19. pp 351-358 May, 1930.
- (2) O. B. Muench. "The Analysis of Cyrtolite for Lead and Uranium." *Am. Jour. Science*, Ser. 5, Vol. 21. pp 350-357 April, 1931.
- (3) Thomas W. Fluhr. "Pre-Appalachian Diastrophism." *Delaware Water Supply News*, No. 56, Nov. 15, 1940. No. 57, December 1, 1940.

Mt. McKinley, Alaska

Mt. McKinley, 20,300 feet high, the highest mountain on the North American continent, is located in south-central Alaska, at the headwaters of Kuskokwim River. It rises higher above the surrounding country than any other mountain in the world. The peak was named in 1896 by W. A. Dickey in honor of William McKinley who was then President of the United States.

The mountain was first scaled on June 7, 1913, by Hudson Stuck, H. P. Karstens, Robert Tatum, and a half-breed boy named Walter Harper, in an expedition which lasted three months.

The peak is now in the Mt. McKinley National Park which contains 2,645 sq. miles.

Agates Near Hebron, N. D.

Nice brownish agates of good quality which take a fine polish are found along the west bank of Knife River, north of Hebron, N. D. Pale brownish translucent

botryoidal chalcedony is also found with the agates.

The locality is in southwestern Mercer County, in the western part of the state.

Zircons in Indo-China

One of the important gem localities in Indo-China are the zircon deposits in the Mongka district. The locality is in the southwestern part of the country, in western Cambodia province (not far from the Chatahun gem center on the southern coast of Siam). The zircons occur as pebbles or rolled crystals in clay and the crude pits sunk in the clay vary from 2 to 10 feet deep. Stones weighing up to 500 carats have been found in the district.

The zircons are brownish or reddish in color, when mined. They are taken to Bangkok, Siam, where they undergo a heat treatment by which many stones become colorless, others blue; when these stones are cut they form brilliant gems. Because the stones are treated and cut in Siam, they are sold as Siamese zircons.

ICKES SAYS U. S. SHOULD STOCKPILE VITAL MINERALS

War So Bankrupted America's Mineral Resources She Should Be Listed Among "Have Not" Nations, States Interior Secretary Who Outlines Program For Exploration and Conservation Of Military, Industrial Sinews

The war's drain on America's minerals and its enforced rationing of fuel and gasoline makes it imperative that the United States build a stockpile of these sinews of military and industrial power as well as finance the exploration of marginal and submarginal resources, Secretary of the Interior Harold L. Ickes declares in a signed article in the December issue of *The American Magazine*, published November 6.

The war so bankrupted some of our most vital mineral resources, says Secretary Ickes, that "we longer deserve to be listed with Russia and the British Empire as one of the 'Have' nations of the world. We should be listed with the 'Have Nots', such as Germany and Japan.

Between January 1, 1940 and January 1, 1945, we tore from the earth some 5,000,000,000 tons of minerals. To prevent the decline of the United States as a major military and industrial power, and to maintain our high standard of living, we must begin at once:

"To stockpile minerals; to explore our country more extensively than ever before; to hunt for better methods of recovering metals from scrap; and to have access, in common with other peacefully disposed nations, to minerals in the lands that have been conquered in the recent war, for from now on we shall be increasingly dependent upon imports for our minerals."

The Secretary of the Interior points out that the U. S. possesses "less than a 35-year peacetime commercial supply of 21 minerals," namely petroleum, copper, lead, zinc, sulphur, natural gas, fluor spar, cadmium, gold, lead, silver, bauxite, vanadium, antimony, tungsten, platinum, asbestos, manganese, chromite, nickel and tin.

"The significance of this," he asserts, "is that 35 years are but little more than the usual interval between wars."

Moreover, writes Mr. Ickes, "on the basis of known usable reserves we have in this country only nine major minerals

which, at the 1935-39 rate of use, may be expected to last 100 years or more — nitrogen, magnesium, salt, bituminous coal and lignite, phosphate rock, molybdenum, anthracite, potash, and iron ore. And a hundred years is nothing in the life of a nation."

Even more alarming than this, in the opinion of Secretary Ickes, "is the fact that we are uncovering few, if any, unknown deposits of minerals." So the more dependent America becomes on outside sources for minerals, the greater must be her military forces, says the Interior Secretary who adds:

"We must keep our military forces — our army, navy, and air arm — strong enough to do our share in maintaining the peace of the world — a peace that is necessary if we are to bring in what we require for our economy. Without a strong military force, we would be laying open the life lines of raw materials to the first aggressor who could gather a sizeable military force about him."

The Cabinet officer is convinced that "one of the surest ways of assuring our basic security in minerals in time of need" is to build up stockpiles. "A large-scale stockpiling program would provide a reservoir into which domestic materials might be placed in times of depression," he states. "Such minerals as we lack entirely, or whose supply here is insignificant, should be imported and added to our stockpiles.

"Our second line of defense is our marginal and submarginal resources. Exploration for new deposits should be carried on vigorously, and plans made for emergency production. Since the defense of the nation is involved, the work of private industry should be aided by government research and by government-sponsored explorations. . . .

"We must encourage and support, morally and financially, the investigations of our research workers and scientists."

"ME AND PA.." TWO OLD ROCKHOUNDS.

Dear Editor:

I do not always listen to Pa, as to detail, when he has discovered something that seems of importance toward improving his methods of lapidary work but when I saw Pa bounce out of his chair and head for the front door I knew, positively, that someone was arriving who Pa could impart some new discovery to with an appreciative ear of what he had to say. Though it did not take long to learn what the idea was all about, after Pa had brought his crony in, he always likes to build up his program with a little 'Fan Fare'. After seating his company he brought out a tray of unfinished beach pebbles and in his hand he held the 'IT' that I knew was in the offing. Then he started in.

"You see this tray of pebbles, Dick, they are all from the beach at Crescent City, Del Norte County, Calif. Some of the smaller agates and jaspers I ground down and made cabochons of them, some of the larger ones I put in the saw and sliced across the narrow way but these medium sized agates were too large to grind a flat side on without too much work and they have bothered me for a long time but a few days ago I tried out a scheme which worked."

Pa paused for a minute to let the importance of his idea sink in then he dramatically held forth a block of wood about 1 and 1½" square x 3 or 4 long; one side had been gouged out through the center, lengthwise, and three carnelian agates were cemented in the groove. Then he explained.

"You know, Dick, those beach agates are so slippery that you can't hold them by hand to saw them and it is hard to get them to hold with chaser cement so I tried water glass. Poured in enough to half-fill the trough then placed the stones in position so that they would split endwise when placed in the saw. But I placed them under the stove and let them dry there for several days and now you could not get them out with pliers. When the water glass dries thoroughly it is there for good unless you soak it in water for,

a quantity like that, hours, but when I mount on lap sticks for dry sanding all that is necessary is to soak for 15 or 20 minutes or, an hour at the most on large sticks.

"You see, Dick, when they are set in the block with groove it gives more depth for the water glass to take hold and by mounting three at once I can fasten b'lock in the hanger and it takes but a few minutes to have two stones for one with a flat for a base on each and but little grinding.

"When I mount on lap stick I simply dob on a little of the water glass with a sliver and stand the stick up between two cushions or in a can of sand, leave them there over night and they will stick. They will come loose in damp weather if left near a crack where the damp air can penetrate the wood. But if kept dry they will hold for weeks. The wet paste used in the finals will not loosen them for it takes some time for it to swell the wood for it does not soak into the water glass. When in a hurry to take a stone off the stick I simply saw close to stone with hack saw and then the rest will soak off in a few minutes. It is so much more simple than using regular dop stick cement as there is no special procedure to be worked, nothing to do but to whittle stick to proper shape, dob on the dope and place stone in right position and let set and at any temperature the rock may be. No heating or fussing with gas plates and burnt fingers or improper cement temperature. Put em on and let set."

Sincerely,

Me, of the Two Old Rockhounds.

P.S.

I do not think Pa ever mentioned that he found many specimens of petrified wood on the beach at Crescent City besides some beautiful grayish-green rocks that took a fine polish though I do not know what their classification may be. One of the specimens of wood proved to be limonite pseudomorph after redwood, a very good chip about 3 x 4 x ½".

ME.

BIBLIOGRAPHICAL NOTES

INTRODUCTORY GEMOLOGY

By ROBERT WEBSTER, F. G. A. AND VIRGINIA V. HINTON, C. G., F. G. A.

From the time of establishment of gemology in the United States in 1930, as a scientific study of gemstones, there has been a need of a book on gemstones which would not only present the fundamentals of gemology, but would, in addition, treat the subject from the standpoint of the identification of gemstones, a treatment of especial value to the jeweler.

To fulfill this need, a volume which first appeared in England as "Practical Gem-mology", by Robert Webster, F. G. A., has been revised for American readers by Virginia V. Hinton, G. G., F. G. A., and published by the Gemological Institute of America, 541 South Alexandria, Los Angeles, California.

Supplementary material in the new publication covers current trends, practices, and instruments in observance or use in gemology and the jewelry industry in America.

Color; light — its reflection and refraction,

The Gem-Table: by Nicola Goodwin D'Ascenzo.

The 2nd edition of this very timely and most interesting *Gem-Table* has just been issued by the author, one of America's leading gem stone collectors who is also a member of the R. & M. A. The *Gem-Table* includes 11 new gem species as well as brazilianite, the new gem.

The *Gem-Table* is 17 x 20 inches in size and sells for \$1.00. Copies may be obtained direct from the author, Mr. Nicola Goodwin D'Ascenzo, 151 Dartmouth Road, Bala-Cynwyd, Penn., or from V. D. Hill, Route 7--C, Box 188, Salem, Ore. (sole agent).

A Catalog of the Minerals and Mineral Localities of Rhode Island: by W. S. Winslow, Jr.

Here is a very timely and complete record of the minerals and mineral localities of our smallest state. Its author is a member of the R. & M. A., one of Rhode Island's leading mineral collectors; in last month's issue of *Rocks and Minerals* he had an interesting article, "Notes on some mineral localities in Rhode Island."

The catalog is 8¼ x 10¾ inches in size and contains 42 pages listing minerals and mineral localities in each of the five counties which make up the State of Rhode Island. Issued by W. S. Winslow, Jr., 145 Olney Avenue, No. Providence 1, R. I.

News Letter:

The October, 1945, issue of the Cranbrook Institute of Science *News Letter* had a number of interesting photos of rocks and minerals depicting a moose, horses, dogs, woodpecker, sea-lion pup, a running urchin, flowers, scenes

absorption and interference; measurement of refractive index; descriptions of the important gem species; pearls; synthetic gems; imitations and substitutes are but a few of the subjects developed by *Introductory Gemology*.

The volume is generously illustrated. Line engravings include illustrations of crystal systems, important styles of gemstone cuts, diagrams of English and American gemological instruments and their principles of operation, and valuable charted and tabulated information for ready reference.

The first series of halftone illustrations, a new feature, displays various of the gemological instruments in popular use in the United States and Canada, while the second presents inclusions typical for certain genuine gemstones and a few imitations and synthetics.

The cloth-bound volume of 181 pages sells for \$2.75 postpaid.

and other objects "The Draper Machine in Lapidary Work", by A. F. Combs, was another interesting feature in the *News Letter*.

Issued by the Cranbrook Institute of Science, Bloomfield Hills, Mich.

Lake Baikal—World's Deepest Lake!

Lake Baikal, the world's deepest lake, is situated in the southern part of Siberia. Its length is 386 miles and its width varies from 9 to 50 miles, its greatest depth is 5,712 feet (over one mile) but it averages 820 feet. The lake is the third largest in Asia and the sixth in the world. It is surrounded by rugged mountains, over a mile high, and the scenery is unusually beautiful.

There are several islands in the lake, the largest of which is Olkhon (in the central part of the lake). The deepest spot in the lake was found near the east coast, close to Cape Ishimel on the Island of Olkhon.

There area around Lake Baikal is famous for minerals; baikalite, apatite, diopside, lapis-lazuli, sodalite are only a few of the fine minerals occurring there.

Lake Baikal was discovered in 1643. The name comes from the Mongolian *Bai-Kul*, which means "rich sea".

The Amateur Lapidary

BEAD DRILLING

By J. H. HOWARD

The drilling of 150 jade beads one-half inch diameter does not qualify one to pose as a gem driller. However, it does give one an idea of some of the troubles and problems connected with drilling and it is the writer's feeling that the listing of what he has accomplished and how, and what he has failed to accomplish, may be helpful to other amateurs and may induce some of them to carry on the study to complete success.

The finding of fine quality jade in the western United States has greatly stimulated interest in the working of jade in America. One of the most effective ways to use this jade is in beads.

Most of us amateur lapidaries have drilled an occasional pendant probably $\frac{1}{8}$ " thick. And we usually found even that, a quite difficult job; enough so to discourage any attempt to drill 75 beads $\frac{1}{2}$ " dia. But we can do it.

Two small diamonds set in the end of a steel rod makes an excellent drill. Also, a single larger diamond set in the same way gives good results if we can find diamonds the right shape and size, that is, a diamond of the right size and somewhat "plate" shaped, thin in one dimension as compared with the other two dimensions. The objections to such drills is that they are necessarily quite frail and subject to breakage. Also if made from naturally shaped or broken diamonds they are very variable in effectiveness. It is to be hoped that better diamond drills will be made and marketed, but diamond workers are too busy now to experiment with such a relatively unimportant tool.

It is possible to drill holes with a solid steel rod and loose abrasive such as diamond dust, boron carbide or silicon carbide. The writer's limited experimenting with this method and such reports as have come from others indicated that this method is too slow for such work as we are considering. Jewel bearings are made this

way but one worker tends many spindles while in our home shop we are not likely to have but one spindle.

So it seems that until better diamond pointed drills are made, we had better use tube drills and it is this method that will be explained. Drilling is like faceting in one respect—it can be most annoying if things don't go right, and it can be beautiful work when the driller's judgement is perfect and luck is with him. This writer has not been able to eliminate the many variables or establish uniformity of results, but only to obtain a reasonable average of behavior.

The drilling machine should be specially built or the necessary special features can be built and adapted to a regu-

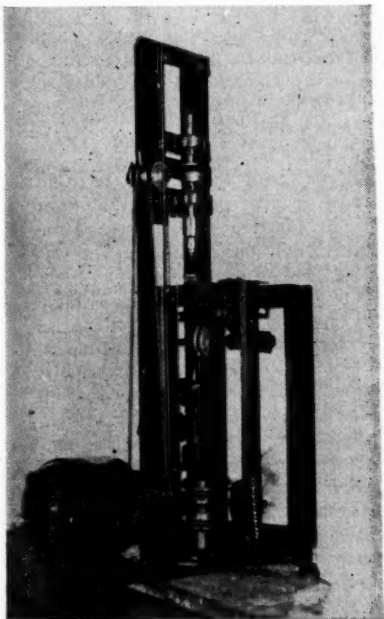


Fig. 1. Drilling machine.

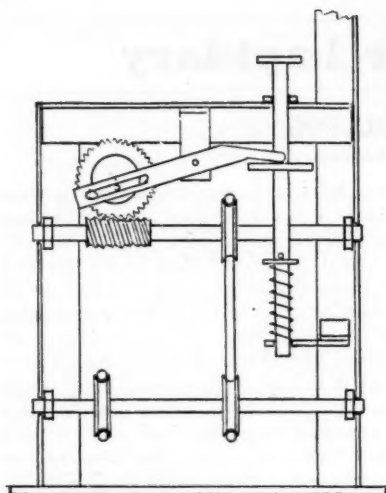


Fig. 2. Drive for reciprocating table.

lar standard drill press. Fig. 1 shows the machine built by the writer. The ball bearing spindle is driven at a speed of about 4000 rpm. The drive into the base of the machine is for the reciprocating mechanism. The essentials of the machine are shown in Fig. 2. The table is held in upward position by a coil spring. Thru a worm drive, a cam actuates a lever that pulls the table downward, compressing the spring and pulling the stone away from the drill point about 50 times per minute. It returns the stone to the drill gently, not with a blow. The chuck is a geared precision chuck with capacity up to $1/8$ ". The table is a disc about $1\frac{1}{2}$ " dia. just visible beneath the chuck.

Making and Truing the Tube Drill

Several kinds of tubes are available in normal times, but now one has to take what he can get. The writer prefers so-called "composition gold filled tube wire" as used by jewelers. The size should be about 1 mm. But this tube is not to be had now. Silver tube is available and brass tube is to be had in $1/16$ " size, outside dia. It was this tube that was used thruout these experiments.

The basic "musts" of the tube drill are, it must be slightly larger at the end than the body of the tube, and it must

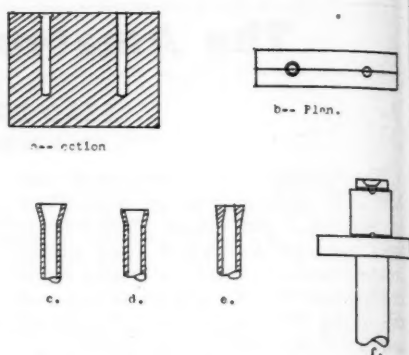


Fig. 3. a. Section—drill tube die.
b. Plan—drill tube die.
c. Tube expanded.
d. Tube trued.
e. Tube expanded—alternate.
f. Assembly of bead cube and funnel on table.

revolve absolutely true. One way of making the drills is shown in Fig. 3, "a" and "b". Take two pieces of flat steel approximately $1/4$ " x $1\frac{1}{2}$ " x 2" long. Clamp them together. Drill a hole the size of the drill tube half in one piece of steel and half in the other. The hole to be as deep as the length of the drill, less about $1/32$ ". Then countersink about $1/16$ " deep slightly larger than the drill tube. Clamp the two pieces in a vise. Stick the tube in the hole and saw it off with about $1/32$ " projecting. With a pointed steel tool and a light hammer, using light blows, expand the end of the tube as shown in Fig. 3-c. The sketch shows one hole with a countersink and one hole without it. An alternate way of making the drill is to insert the tube in the plain hole, cut it off, leaving it projecting about its own diameter. Then hammer on the end lightly, swelling the tube both outside and inside its wall. The resulting point will be as Fig. 3-c.

A little later we will consider the chucking and truing of the drill. The material for making the beads is sawed to cubes and drilled while in that shape. The drills we have talked about are for the main part of the drilling, for "the

long run", but they cannot be used (except by special setting) for starting the holes. For drilling a hole half-way thru a $\frac{1}{2}$ " bead, the drill must project from the chuck about $\frac{5}{8}$ " to $\frac{3}{4}$ " and when projecting that far is not strong enough to insure its starting the hole in the right place — there is too much danger of its dancing to one side and starting a hole in the wrong place or refusing to start it. So a lead hole must be made by other means. This may be done with a solid rod, diamond pointed drill or with a special tube drill made as in Fig. 3-c, but slightly larger than the regular drill. If the tube drill is used it should project from the chuck no more than $\frac{1}{4}$ " so that it will have sufficient strength not to bend. The beads are to be drilled from opposite sides, so two lead holes are required in each bead. The lead holes may be from $1/32$ " to $1/16$ " deep.

Next, chuck and true one of the regular drill tubes. Let it project $\frac{5}{8}$ " to $\frac{3}{4}$ " from the chuck. Set it carefully and tighten in place so that it is as nearly true as possible. This will not be absolutely true. Start the machine and with the spindle revolving at full speed, hold a wood stick against the side of the tube just back of the point. Press the drill considerably to one side, then remove the stick slowly. It may take a little experimenting to determine how much the tube can be bent to one side without its breaking. When the tube has been trued as much as possible by this means the final trueing is gotten by holding a fine file lightly against the side of the expanded end and filing away enough of this expanded part to true the end. See Fig. 3-d.

The next job is to set the stone so that the lead hole is directly under the drill tube. This is not easy and failure to do this causes a lot of grief. It would probably be worth while to have micrometer adjustments in both directions on the table guide, but lacking these a fairly satisfactory way to do it is by floating the bead to place on a bed of chasers cement. See Fig. 3-f.

Have the distance between the drill

point and the table such that when the table is in its lowest position, it lifts the bead about $1/16$ " down from the point of the tube. Now start the machine and stop it when the table is in its top position. Sprinkle powdered chasers cement liberally on the table. Heat the bead quite hot. Depress the table by hand against its spring. Put the hot bead on top of the powdered cement. Then let the table rise and hold the bead lightly against the drill point. Revolve the spindle by hand a few times with the spring pushing the table upward and the drill point resting in the lead hole. If this is done carefully and quickly, before the bead cools, the result will be that the bead will "float" on the cement, melted by the heat of the bead and will center itself. After the bead has set but before it gets cold, cement a "funnel" on top of the bead. This funnel can be made of any metal, a small stove bolt nut filed or reamed to funnel shape makes a good one. Heat the funnel with the alcohol lamp, smear chasers cement on its back and press in place while hot. See Fig. 3-f. for assembly of bead on table and of funnel on bead.

Put a small amount of diamond dust in the bottom of the lead hole. The dust that seems to work best is that designated by some makers as "No. 1". It is from 100 to 200 mesh. How to describe "a small amount" is difficult. For measuring use a medium size pin with the point ground off. Dip the end of the pin in light machine oil. Touch it to the dry diamond dust until a lump of dust about half the diameter of the pin head adheres to the pin. Put this amount in the lead hole directly under the drill point. Then fill the funnel with kerosene oil or turpentine.

Start the machine. If luck is with you the hole will be drilled half way thru the bead in a reasonable time and without further attention. But do not expect perfect behavior as a regular thing. Many things can happen and often do happen to slow the job or stop it entirely.

There should be a gauge of some kind

to indicate if drilling is proceeding at a satisfactory speed. Normal behavior is: 2/64" to 3/64" drilling the first minute, 1/64" to 2/64" the second minute, and about 1/100" per minute until the hole is half-way thru the bead. The machine should drill half-way thru the bead in from 15 to 25 minutes. The writer has drilled batches of a dozen at an average speed of 15 minutes per half-bead and has drilled a half-bead in 7 minutes. But he has not been able to maintain this low average time.

If the drilling slows down unduly, try adding a small charge of diamond. If it stops entirely, considerably short of the half-way point, the probability is that the core has either broken off and is loose in the hole or has broken off and has jammed in the tube. In the former case the broken core should be removed and most likely the tube will have been ruined. In the latter case a new drill must positively be used. In putting a new drill into an old hole, one must be sure the new drill is small enough to go into the hole and the new drill should have a fresh charge of diamond.

It is not to be hoped that one drill will cut much more than half-way thru a 5/8" bead. Sometimes it will drill all the way thru but it cannot be expected as a regular thing. The tube will be gradually worn and by the time it had drilled 5/16" to 3/8" it has usually slowed down to where it pays to turn the bead over.

Too much diamond dust in the hole is not good — reason undetermined.

The stone is removed from the bed plate by a light sidewise blow that breaks the cement.

If the stone is carefully washed in a small earthenware cup of gasoline, practically all the diamond can be recovered. When a considerable amount of the sludge has collected, wash it with gasoline in an ordinary dinner plate, using a rotary motion like panning gold. Practically all the diamond can be saved and used again. The amount of diamond required for this drilling is surprisingly small. This writer has drilled 25 complete beads with 1/2 carat of diamond.

If the tube is not belled enough, diamond grains will wedge between the tube and the wall of the hole and will destroy the tube or greatly slow down the drilling. If the tube is belled too much the core it cuts will be too large to enter the straight part of the tube and cutting will stop.

While the holes should be centered as accurately as possible in the cubes, they can be off-center a surprising amount without its showing when the beads are strung.

Holes do not always meet perfectly, in fact they seldom do so. When they do not meet properly, they can be easily reamed with wire charged with silicon carbide or boron carbide. Use wire just smaller than the hole. Stick the wire thru the hole in the bead, clamp one end of it in a vise holding the other end in the hand. Daub the wire with a paste of the abrasive and oil and slide the stone back and forth on the wire until the hole is satisfactory.

Much study is still to be given to this problem of drilling. No statement that has been made in this paper should be taken as a definite assertion. All elements are still open to question and it is hoped that other experimenters will study scientifically:

1. Kind of tube to use.
2. Method of shaping the tube for best results.
3. Size of diamond grain that is best.
4. Speed of drill.
5. Speed of reciprocal motion.
6. Methods of truing drill.
7. Method of setting stone on bed plate.
8. Et Cetera.

Because this writer has drilled 5/16" of jade in 7 minutes, we know it can be done. The problem is to find what circumstances combined to produce this result and to learn how to control these circumstances.

Club and Society Notes

Mineralogical Society of Southern California Pasadena, California

The MSSC always has a good meeting and Monday night, October 8th, 1945, was no exception. The little room to the left of the Main Lobby in the big Library was packed to the door, and some of the very finest mineral specimens were exhibited. Many specimens ranging in price from \$5.00 to \$25.00 and others priceless. We have the Collectors here. If you don't believe it, come and visit us next Month — any month, and Brother, wait until we put on the Convention next June, you'll see why we have a rip-roarin' time at our Meetings and Conventions. We have some good solid workers too, solemn, serious men and women, who have a deep and abiding Faith in their fellow-men, and who love minerals so deeply that they go about their work with singing hearts, knowing that their fellow-men will "Pass by their doors" and will look upon their work and call it good. That will be all the pay they require for those tireless hours they have already put in, and all the hard labor they will perform between the present and the Grand Day of the Opening of the Convention. More of this in later issues. Get ready to come to Pasadena in June.

Ralph Dietz entertained us with a fine discussion of his trip to the Benitoite mines of San Benito County, California, in 1940. He has some lovely specimens also which were on exhibit. Try to buy some of Ralph's specimens for \$25.00 — yes, just try. Benitoite was discovered in 1906 by J. M. Couch and I. B. Hawkins, grubstaked by R. W. Dallas, while searching for mercury. When J. M. Couch, searching up a draw from the valley floor first encountered this rare new gem stone, and brought a piece of matrix with these blue crystals embedded in it, no one knew what it was. Some experts classified it as sapphire, and others called it volcanic glass — even jewelers in San Francisco and Los Angeles fell upon their noses on this — and finally it was brought to Dr. G. D. Louderback, who thoroughly analyzed it and accurately identified it, giving it the name of Benitoite, early in 1907, because of the locality in which it was discovered. Immediately he went to the mine and discovered another new species, Joaquinite, also named from its locality "Joaquin Ridge." At the time he thought he had another new species, for it seemed that new species were the order of the day, but later he discovered that the third mineral was Neptunite, formerly found in Greenland and named after the Icelandic God of the Sea — Neptune.

John A. Quinn

Mineralogical Club of Hartford

A regular meeting of the Club was held on October 10, 1945, at 249 High Street, Hartford, Conn. The program consisted of talks on minerals by members.

Mineralogical Society of the District of Columbia

A regular meeting of the Society was held on October 19, 1945, at the U. S. National Museum, Washington, D. C. Dr. Ferdinand G. Brickwedde was the speaker whose subject was "Nu-clear Power" and which covered atomic energy.

Arkansas Mineralogical Society

The 17th Annual Meeting of the Arkansas Mineralogical Society was held at 7:30 P. M., Wednesday, October 10th, 1945, at the Women's City Club, 401 Scott Street, Little Rock, Arkansas.

The following awards were made:

Ladies' door prize; Arkansas Pearl Ring, donated by H. E. Powell Co.

Gentlemen's door prize; Cigarette Lighter, donated by Cave's Jewelry.

Best single Arkansas Mineral specimen; Onyx Ash tray, donated by Huiper's Jewelry.

Best mineral exhibit; a nice gift by Keeby's Jewelry.

Best gem exhibit; nested ash trays in Candlewick pattern, donated by Stewart's Jewelers.

Northern California Mineral Society

Four meetings of the Society were held in October, 1945.

October 5th—Business meeting.

October 12th—Micro-mount evening.

October 17th—General meeting at the Public Library, San Francisco, Calif.

October 26th—Laboratory night.

Yavapai Gem and Mineral Society

Alvin A. Hanson explained the method of assembling micro-mounts at the August, 1945, meeting of the Yavapai Gem and Mineral Society, (Prescott, Ariz.) and exhibited his unique collection of them. There was a full house and two tables of exhibits. Betty Rye won the door prize and E. C. Gorman the quiz prize. The society took their first field trip Sunday, August 23, to the agate beds near Hell's Canyon. Incidentally this was Prescott's first rock hound *caravan* to go sleuthing for "just rocks", after almost a century of prospecting and mining for gold, silver and other precious metals. Polished cabochons of the agate were exhibited at the September meeting.

Ida Smith, Secretary

Pacific Mineral Society

A regular meeting of the Society was held on October 16, 1945, at the Asbury Apt. Hotel, Los Angeles, Calif. The speaker was H. Stanton Hill whose subject was "Lead and zinc mining in the Mississippi Valley."

Los Angeles Mineralogical Society

A live group gathered September 20, 1945, for the Thirteenth Birthday meeting of the LAMS and nearly all past presidents were there and each gave a talk entitled "My Most Interesting Field Trip." Some were humorous, some funny, and some serious, but they were all topped by that of Dr. John Herman whose trip started in Prague, Czechoslovakia, and went down through that little ill-fated town of Lidice and wound up at Pribram. Lidice, lest we forget, was wiped out to a man by the Germans because of their harboring the slayer of Hangman Heydrich. The women and children were taken to a "Home" in all probability the "Murder Factory" for not more than three of them — children — were heard from again. But let us forget that for the moment and go on. Pribram has a silver mine which was first opened along about the year 800, and has enjoyed 44 different periods of deposition. It is unique and furnishes a proving ground for the students at the School of Mines near by. Dr. Herman did justice to it in his talk which may appear in this magazine later on — if I can persuade the Editor that he has space enough for it.

The Society had a large birthday cake, and Boos Brothers furnished the coffee to go with it. We meet on the Mezzanine floor of their Cafe, every third Thursday evening at 6:30 P. M. A jubilant crowd bubbled with excitement. This is the second oldest Mineralogical Society in Southern California. The Oldest, or No. 1, is in Pasadena. The LAMS was organized in 1932. Dr. Howard R. Hill reported on his trip into Last Chance Canyon in 1924 when he secured bones of ancient horses and camels and the lower tusk of a four-tusk elephant, also the femur or thigh-bone of this animal, which is still in the L. A. Museum. Dr. Thomas Clements, First President, (1932-1933-1934) told of his trip into the emerald mines of Colombia, South America, for our Government, in the year 1939. Five of the party, including his wife, traveled from Bogota across the mountains on muleback some 23 kilometers, or about 15 miles, through jungles, before reaching the mines. Crude methods are still in use there and the mines are jealously guarded by Government agents, but after considerable red tape the Doctor succeeded in impressing the Agents sufficiently so that they finally gave him some emeralds to take home with him. They take out only what emeralds the trade will absorb and make no pretense at mass production.

Mrs. Lintogel, the oldest member present, (she is 85) bought the door prize, first won by Gordon Funk, and then raffled off for the benefit of the Society. They have a live Bunch, headed by President Richard R. F. Lehman, a former School-mate of mine at U. S. C., so I joined the Society. The War is over — Now let's all get started collecting minerals in

earnest. Field trips are the order of the day. Night Schools are being crowded with Rock Hounds seeking more knowledge of the Art. Go back to School, is the Watchword.

John A. Quinn

New Jersey Mineralogical Society

Dr. A. K. Snelgrove, whose subject was "Mineral research in New Jersey", was the speaker when the Society met on October 2, 1945.

The Society meets at the Plainfield Library, Plainfield, N. J.

Newark Mineralogical Society

A field trip to the famous zinc mines at Franklin, N. J., was held on Sunday, October 21, 1945. Seventeen members were present, under the leadership of Louis Reamer, and most of the activities were centered on the old Buckwheat mine dump (bordering Franklin Avenue) and quite a number of interesting minerals were collected including allanite, calcite, dolomite, epidote, franklinite, garnet, hematite, molybdenite, phlogopite, serpentine, willemite, and zincite. Many nice fluorescent specimens were also obtained.

The Society meets at the Newark Museum, Newark, N. J.

Queens Mineral Society

A meeting of the Society was held on October 4th, 1945, at its headquarters in Richmond Hill, N. Y. It was called to order at 8:25 p. m. There were 30 members and guests present.

Mr. Maynard reported that the Club would not have to change the meeting night, as other conflicting meetings have been changed to different evenings.

The program committee announced that the speaker for November would be Mr. Casperson, Curator of Paterson Museum. The subject to be discussed would be the minerals of Paterson, N. J.

The trip to Rutgers University, to view its collections, was set for October 21st.

Several members expressed their desire to take the course in Elementary Mineralogy, given by Mr. Segeler at his home. Several members also wish to take the course in Megascopical Petrology given by Mr. Greene at his home.

Mr. Blair Burwell, Vice-President of the U. S. Vanadium Corp., and Mr. Joseph Brennan, Chief Metallurgist of the Union Carbide Corp., were introduced as the speakers of the evening. Mr. Burwell spoke on the deposits of carnotite, the chief ore of vanadium and uranium, and on the geology of the area in which the mineral is found. Mr. Brennan spoke on the use of the electric furnace in winning metals from their ores. Specimens of carnotite were given to the members by Mr. Burwell.

The meeting adjourned at 10:30 p. m.

Respectfully submitted
Theodore Fredericks, Secretary

Monterey Bay Mineral Society

Our initial meeting held July 9th, 1945, in Salinas, Calif., was entirely organizational and plans resulted that promise an active group and interesting program. We also established a library for the Society and planned for a travelling exhibit to foster interest in a junior club to be sponsored later.

At the second meeting, August 13th, Lt. E. D. Spaulding gave a talk on "The History and Practice of Gold mining in the Philippines" and he showed rich specimens of the ore from the mines. Cake and coffee were served at the end of the meeting and it was such a success, refreshments were promised at each meeting.

At the third meeting, September 10th, Mr. Clarence Miller, chemist at the Natividad plant, brought an excellent color and sound film "Permanente Magnesium — The Magic Metal for War and Peace" to show the group and conducted the discussion that followed. It was interesting for the group to be able to see and handle the specimens of the magnesium ore and its by-products at different stages of the process, that he displayed. At the business meeting that followed, a jewelers' display case was given to the Society by Dr. O. C. Marshall of Watsonville. An official insignia for the Society was selected by the group from several sketches submitted by Mr. Mervin Lopes of Salinas. These sketches were a result of suggestions sent in by members at the last meeting, and the insignia will appear on stationery, membership cards, bookplates, and all official papers of the Society.

Our complete list of officers and committees to date follows:

Mr. William O. Eddy, Salinas
PRESIDENT

Mr. T. G. Emmons, Salinas
VICE-PRESIDENT

Mrs. Jane B. Flippin, Salinas
SECRETARY-TREASURER

Mr. A. W. Flippin, Salinas
EXHIBIT & DISPLAYS CHAIRMAN

Dr. K. W. Blaylock, Salinas
PROGRAM CHAIRMAN

Mrs. Daisy Samuelson, Salinas
REFRESHMENT COMMITTEE

Mrs. Helen Tripp, Salinas
REFRESHMENT COMMITTEE

Mrs. A. L. Jarvis, Watsonville
RECEPTION COMMITTEE

Miss Alice R. Everett, Santa Cruz
RECEPTION COMMITTEE

Mr. V. E. Schoonover, Monterey
RECEPTION COMMITTEE

Mr. Willard Farr, Salinas
RECEPTION COMMITTEE

Mr. R. L. Dey, Salinas
RECEPTION COMMITTEE

Mr. A. H. M. Samuelson, Salinas
RECEPTION COMMITTEE

The charter membership numbers 36 so we feel that after only three meetings we are definitely organized and well on the way to an excellent organization. The *second Monday* of the month was set as the regular meeting night at 7:30 p. m. at the Salinas Y. M. C. A. — Cor. Clay and Church Streets. Visiting rock-hounds are always welcome.

Jane B. Flippin
Secretary-Treasurer

Mineralogical Society of Arizona

The first meeting of the 1945-1946 season was held on October 4th.

Meetings are held on the first and third Thursday, October through May, at 8 P. M. in the Arizona Museum, West Van Buren Street and Tenth Avenue, Phoenix, Arizona.

Officers for the coming season are:

President—Arthur L. Flagg

Vice-President—Dr. George G. McKhann

Secretary—Humphrey S. Keithley

Treasurer—Herbert B. Holloway

The 1944-1945 season closed with a membership of 264. During the season 47 members were added.

Despite the large number of members in various branches of the armed service not one has been lost.

H. S. Keithley, Secretary

Wisconsin Geological Society

A regular meeting of the Society was held on October 1st, 1945, at the Milwaukee Public Library. The speaker was Jim Montague who spoke on Silurian fossils of Wisconsin.

Los Angeles Lapidary Society

At the meeting held on October 1, 1945, Dr. Chang Wen-Ti, international authority on jade, was the speaker whose subject was "Occurrence and method of mining jade in Burma."

The Society meets at the Royal Palms Hotel, Los Angeles, Calif.

Worcester Mineral Club

On Sunday, September 30th, 1945, the Worcester Mineral Club, (Worcester, Mass.) conducted its first, and much enjoyed, field trip to Townsend, Mass., where two granite quarries were visited. As neither of these quarries have been worked for many years and have been pretty well combed by mineral collectors since they were shut down, no spectacular finds were made. However, as this was the first field trip for several of the members, it served as an initiation into the art of rock pounding. The enthusiasm was high and more trips are planned for the near future.

Miss Susan G. Ayres, Sec.

Colorado Mineral Society

A regular meeting of the Society was held on October 5, 1945, at the Museum of Natural History, Denver, Colo. Harvey C. Markham was the speaker whose subject was "Colorado fossils and field work in fossil collecting."

New York Mineralogical Club

American Museum of Natural History, New York, N. Y., Wednesday, May 16, 1945.

Convened: 8:15 P. M. Attendance: 46.

The meeting was called to order by the president, Mr. Taylor. The treasurer, Dr. Kindle, read his annual report, reporting a net gain of \$140.00. It was moved and passed that the report, which had already been audited, be accepted and placed on file. The annual report of the president was also read. It was announced that Dr. Pough had made arrangements with Mrs. William Boyce Thompson for the club members to visit the Thompson collection on May 26.

The Secretary announced that Mr. Donal Hurley of Little Falls, N. Y. had offered to trade a Kentucky quartz geode for a crystal of any quality from the Island of Manhattan.

The speaker, Mr. Newton Marshall, Vice-president of the South American Gold and Platinum Co., then addressed the meeting on the subject of recovery of gold and platinum from South American placer deposits by dredging. The operations are conducted in the Choco where the annual rainfall is 280 inches. The native miners pan the richer gravels of the small streams by hand while the dredges work the lower-grade river deposits. Because the dredges can handle 10,000 cubic yards of material in a twenty-four hour day they can profitably work ground yielding as low as 15 cents per cubic yard at an operating cost of 13 cents per cubic yard.

Mr. Marshall's talk was illustrated by a motion picture showing the dredging, refining, and processing of gold and platinum.

The meeting was adjourned at 9:50 P. M.

Respectfully submitted,

Elizabeth Armstrong, Secretary.

East Bay Mineral Society

Two meetings of the Society were held during October, 1945. On October 4th was a Vacation Special; a regular meeting was held on Oct. 18th and the speaker was Richard J. Paulsich whose subject was "From apprentice to professional lapidary."

The Society meets at the Auditorium Lincoln School, Oakland, Calif.

Texas Mineral Society

A meeting of the Society was held on October 9, 1945, at the Baker Hotel in Dallas, Texas.

Many new specimens were shown and discussed.

Mr. Geo. A. Rifiling, who has taken several thousand colored pictures thru Mexico and Yucatan, exhibited a few hundred to the Society at its meetings and all members present were of the opinion it was better than any show you could have seen.

Some business was discussed and everyone enjoyed the evening.

A. O. Phipps, Secretary-Treasurer

State Mineral Society of Texas

That long awaited State Meeting and Mineral Show is to be held at Dallas, Texas, on November 17th and 18th at the Jefferson Hotel. The meeting will start at 2:00 p. m. on Saturday, November 17th.

The Society extends an invitation to all collectors to participate in this mineral show. Get out all of your very best specimens, label them, put your name on them, pack them gently and bring them with you to the display as the Society wants to have the best mineral show possible. Don't forget the dates!

Boston Mineral Club

A regular meeting of the Club was held on October 2, 1945, John N. Trainer, of New York City, was the speaker whose subject was "The Tilly Foster iron mine and its minerals", illustrated with specimens and slides.

Marquette Geologists Association

On October 28, 1945, the Association held a field trip to the Badlands of Illinois (the strip mines in the Coal City, Wilmington district) for fossil flora for which the area is famous.

The Association meets at the Academy of Sciences, Chicago, Ill.

Maine Mineralogical and Geological Society

At the meeting on September 28, 1945, H. M. W. Haven presented an illustrated talk on the mineralogy and geology he encountered on his western trip this past summer.

The Society meets at 119 Exchange Street, Portland, Me.

QUARTZ AT GREEN LAKE, WISCONSIN

By KEITH R. DAHLBERG

At the Northern Baptist Assembly Grounds, near Green Lake, Wisc., there is an abandoned quarry, now used for trash disposal. Several varieties of quartz are found here.

Druses of a peculiar dull red quartz are common, while beautiful druses of rose and smoky are occasionally found. In the northern wall, one may obtain deli-

cate, concentrically banded quartz, built up with botryoidal structure. Opaque, light orange, massive quartz is also found.

The quarry is located a few hundred feet from the tall tower known as "Judson Tower". It is well to inquire at the Assembly's hotel before going to the quarry.

... With Our Dealers ...

Thompson's Studio, of Pomona, Calif., have some choice specimens for discriminating collectors.

A new advertiser this month is Lloyd Colburn, of Longview, Wash. Better look his ad up.

Some more lapidary equipment is featured this month by Warner & Grieger, of Pasadena, Calif. They are also in the market for a number of mineral specimens in small to large amounts.

The 2nd edition of O. C. Smith's great book, *Mineral Identification Simplified*, is just off the press. It has been revised, too. Get your copy, today!

Choice desert specimens are in stock, says Jack Frost, of Banning, Calif.

Keweenaw Agate Shop, of Ahmeek, Mich., presents a number of interesting polishing material, minerals, etc. Don't pass them by!

William T. Baxter, of Bethesda, Md., is with us again. His Christmas gift suggestions should appeal to all of our readers.

Another dealer who features Christmas specials is the H. E. Powell Company, of Little Rock, Ark.

A. J. Alessi, of Lombard, Ill., features a color parade of minerals!

Colorful cabochon material has just been received by Mrs. B. F. Nonneman, of Salinas, Calif.

Need a sapphire scribe for marking gems and jewelry? The Mineral Specialty Co., of Kansas City, Mo., (a new advertiser), has them in stock.

More bargains for our readers are continued this month by the West Coast Mineral Co., of La Habra, Calif.

Gold mountings for semi-precious stones can be obtained from E. A. Baust, of Eureka, Calif.

"Compleat" Lapidary, of Burbank, Calif., announce a holiday offer on their machines.

E. W. Foerster, of Krueger Lapidaries (Los Angeles, Calif.), spent a few days recently, in the desert collecting gem minerals for their stock.

Hermosa Gem & Mineral Shop, of Durango, Colo., announce the arrival of the finest silicified woods, agates, and jaspers from Arizona and Utah.

John S. Albanese, of Newark, N. J., who was discharged from the Navy on July 26th, 1945, is planning to reenter the ranks of mineral dealers as soon as he accumulates a new stock of minerals. See his ad!

Chas. E. Hill, of Phoenix, Ariz., specializes in Arizona gems and minerals.

Notice the specials offered by Ancient Buried City, of Wickliffe, Ky.

Chas. O. Fernquist, of Spokane, Wash., is with us again. He has had some difficulty in obtaining good specimens which is reason for his absence.

If you are interested in plume agates look up the ad of Mrs. Mae Duquette, of San Gabriel, Calif.

A number of collectors items may be found in the ad of Ward's Natural Science Est., of Rochester, N. Y.

The Colorado Gem Co., of Bayfield, Colo., announces that over 40 lots have been sold in its Gem Colony.

Something New! This is the caption for the ad of John L. James, of Tonopah, Nev.

J. L. Davis, of Hot Springs, Ark., has a partner to assist him. The partner is his son who has spent more than four years in the armed service of our country, with 35 months over-seas. Our best wishes are extended to them.

M. G. Horton (formerly Everts L. Horton), of Bethesda, Md., is with us again and as before a number of choice mineral specimens are being featured.

The Wiener Mineral Co. of Tucson, Ariz., are continuing their list of fine specimens with other assortments. Note their Christmas offer!

The Western Mineral Exchange, of Seattle, Wash., feature another selection of lapidary equipment and supplies, books and minerals.

Want any New Mexico opalized wood? O. T. Branson, of Albuquerque, N. Mex., has some nice specimens in stock.

B. F. Young, of Portland, Ore., is a new advertiser who is specializing in lapidary supplies.

Silver State Minerals, of Mina, Nevada, is also a new advertiser and they are featuring many minerals which have been collected in their mines.

Marvin's Rock Shop, of Durango, Colo., is a creator of distinctive handcrafted jewelry. A trial order will convince you of this.

A. L. Jarvis, of Watsonville, Calif., is another dealer who features Christmas gifts. Although Christmas is still a few weeks away, it is good judgment to prepare for it by buying your gifts NOW.

A Christmas bargain is offered collectors by Roberts & Stevens, of Monterey Park, Calif.

New shipment of Brazilian carnelian,

Natural colors; red banded and blue banded Brazilian agate, natural colors. Choice material 30c per square inch. Assortment of 50 cabochon blanks, diamond sawed \$2.60. 1 roughed in heart pendant, vertically drilled, ready to sand and polish, plus 12 choice cabochon blanks for \$3.00. 10 roughed in cabochons, ready to sand and polish, \$2.25. Postpaid. Satisfaction guaranteed or money refunded.

Arthur and Lucille Sanger

1922 Newport Avenue, Chicago 13, Ill.

SAPPHIRE SCRIBER

Pointed sapphire rod one-half inch long mounted in plastic, vest pocket, handle. Excellent for marking gems and jewelry. Hardness tester No. 9 on Mohs scale.

\$1.00 Postpaid

MINERAL SPECIALTY CO.

5411 Virginia St.

Kansas City, Mo.

Christmas Gifts

Heart Pendants complete with chains your choice of Brazilian Agates, Moss Agates, Australian Opal, Bloodstone, Variscite, Spider Webb Turquoise, Montanna Agates, Flowering Obsidian and Petrified Woods.

May be had in Preforms, shaped and drilled ready to sand and polish priced according to material **\$3.00 to \$12.50.**

Prices range from **\$8.00 to \$25.00**, priced according to size and material.

A. L. JARVIS

RT. 2, BOX 350

WATSONVILLE, CALIF.

3 Miles South State Highway No. 1

What is your specialty—crystals, gems, rocks, ores? Our dealers have them all and all of good quality at attractive prices.

